

# Ecuador

*Overview of*

## **TOBACCO USE, TOBACCO CONTROL LEGISLATION, AND TAXATION**

World Bank Group  
Global Tobacco Control Program  
Country Brief

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# Ecuador

## Overview of Tobacco Use, Tobacco Control Legislation, and Taxation A Country Brief

### Executive summary

Ecuador has a strong tobacco control policy. A comprehensive tobacco control law was adopted and implemented. In 2017, Ecuador was awarded the World No Tobacco Day Prize of the World Health Organization (WHO) for its tobacco control efforts and implementation of the WHO Framework Convention on Tobacco Control (FCTC). Such policy was very beneficial to public health: according to the National Institute of Statistics and Censuses (INEC), the prevalence of daily smoking among people aged 15 years and older was 9.5% in 1998, and in 2014 it reached 2.8%.

Estimated annual cigarette consumption in Ecuador declined from about three billion cigarettes in 2007-2010 to about one billion cigarettes in 2017.

In November 2011, the excise for cigarettes was changed from ad valorem to specific, and it was gradually increased from 0.08 USD per 1 cigarette to 0.16 USD per 1 cigarette in May 2016.

Tobacco excise revenue increased by 64% in 2010-2015 due to the strong taxation policy. Some decline in tobacco excise revenue was observed in 2016, but it was caused by a sharp reduction in tobacco affordability after the decline of population incomes caused by the earthquake of April 2016. As the affordability reduction has a long-term effect, cigarette sales continued to decline in further years. However, cigarette excise rates were not increased in 2017 and 2018, and, as cigarette sales declined, the government excise revenue also decreased in 2017 and 2018.

The pricing policy of the tobacco industry also contributed to the reduction in cigarette affordability and cigarette sales in Ecuador. However, due to such pricing policy, the tobacco industry apparently increased its profits despite the sharp decline in cigarette sales in the country.

The pricing policy of the tobacco industry also increased price difference between legal and smuggled cigarettes, but the industry claims that the cigarette smuggling into Ecuador is caused by “very high” taxes. While the increases in cigarette prices in recent years could encourage cigarette smuggling into Ecuador, the smuggling growth was only a minor factor in the decline in cigarette sales in 2016-2018. The government of Ecuador introduced strong policies against tobacco smuggling in 2017, and even according to the tobacco industry estimates, there were no increases in the smuggled cigarette numbers in 2017-2018.

The following recommendations could bring both public health and fiscal benefits to Ecuador:

- Specific excise rate for cigarettes should be annually increased by at least 20% to ensure the reduction in tobacco affordability and the increase in the excise revenues.
- Tobacco use surveillance and monitoring should be further developed in Ecuador, including a regular collection of information on smoking prevalence, tobacco consumption, licit and illicit cigarette sales, prices, and other economic indicators.
- Effective policies to counteract tobacco smuggling and other kinds of illicit tobacco sales should be implemented in line with the provisions of the FCTC Protocol to Eliminate Illicit Trade in Tobacco Products.

## **Acknowledgments**

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## Introduction

### *The Objective of the Country Brief*

This country brief presents an overview of current tobacco control legislation, tobacco use, and taxation policy in Ecuador. Data and information were collected from various sources. The brief is intended to serve as the context for complementary assessments on different aspects of tobacco taxation in the country to be shared with government teams and other national and international stakeholders.

## Tobacco control legislation

Ecuador became a Party to the WHO Framework Convention on Tobacco Control on October 23, 2006. Ecuador ratified the Protocol to Eliminate Illicit Trade in Tobacco Products on October 15, 2015.

On 14 June 2011, the Ecuadorian Parliament adopted the Tobacco Control and Regulation Act containing strict rules for smokers and sellers of tobacco products<sup>1</sup>. It repeals and replaces the Organic Law Amending the Organic Law of Consumer Protection, which previously governed many aspects of tobacco control<sup>2</sup>. The most important provisions of the new act include: a complete ban on smoking in all enclosed areas of workplaces, public places and sports environments, all enclosed and outdoor areas of health and educational facilities, and all public transport facilities; a ban on all tobacco advertising, promotion and sponsorship; a ban on sales to and by minors; and further restrictions of sales of tobacco products, including a ban on tobacco vending machines and tobacco packages of fewer than 10 cigarettes or less than 10 grams of tobacco; pictorial warnings must cover 60% of both principal display areas of packs. According to the new legislation, education and health authorities had to include tobacco-related matters within educational curricula and implement public awareness campaigns. The legislation also refers to the enforcement and sanctions in case of non-compliance.

The bylaw No. 1047<sup>3</sup> to implement the Tobacco Control and Regulation Act was issued in February 2012. It introduced provisions on smoke-free environments and tobacco advertising, promotion, and sponsorship.

In 2017, Ecuador was awarded the World No Tobacco Day Prize of the World Health Organization (WHO) for its tobacco control efforts and implementation of the WHO Framework Convention on Tobacco Control (FCTC). The president of the Republic Lenin Moreno celebrated the award, which he described as "*well-deserved recognition for the policies adopted to reduce tobacco consumption.*"<sup>4</sup>

In 2011, then the Vice President of the Republic of Ecuador Lenin Moreno received the medal of "Character of the year 2011 that does not smoke" in recognition of his support for tobacco control<sup>5</sup>. Lenin Moreno thanked for the recognition given to him and expressed his commitment to work for the approval of the Law for the Regulation and Control of Tobacco. When asked about the most important things for life, he said: "*being able to breathe, oxygen, air*"; and he encouraged all those present not to get carried away by things that are not substantial for life such as tobacco, alcohol, and drugs.

Before the above-described events, the tobacco control policies in Ecuador were rather controversial.

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<sup>1</sup> [http://www.who.int/fctc/implementation/news/ecuador\\_news/en/](http://www.who.int/fctc/implementation/news/ecuador_news/en/)

<sup>2</sup> <https://www.tobaccocontrolaws.org/legislation/country/ecuador/summary>

<sup>3</sup> [http://instituciones.msp.gob.ec/images/Documentos/tabaco/Reglamento\\_Ley\\_Control\\_Tabaco.pdf](http://instituciones.msp.gob.ec/images/Documentos/tabaco/Reglamento_Ley_Control_Tabaco.pdf)

<sup>4</sup> <https://www.eluniverso.com/noticias/2017/05/31/nota/6209026/oms-premia-ecuador-su-lucha-contratabaquismo>

<sup>5</sup> [https://www.paho.org/ecu/index.php?option=com\\_content&view=article&id=338:vicepresidente-republica-ecuador-comprometio-apoyar-esfuerzos-relacionados-control-regulacion-tabaco&Itemid=360](https://www.paho.org/ecu/index.php?option=com_content&view=article&id=338:vicepresidente-republica-ecuador-comprometio-apoyar-esfuerzos-relacionados-control-regulacion-tabaco&Itemid=360)

Ecuador was the first Latin American country in which the transnational tobacco companies launched a campaign to “discourage juvenile smoking.” In 1989, the PMI’s affiliate Tanasa (Tabacalera Andina) developed a television advertisement in response to actions taken by the Ministry of Health to control tobacco. In 1990, another PMI affiliate, Proesa (Provedora Ecuatoriana), had partnered with the Ecuadorian Ministry of Education to air a 40-second television advertisement called “Fumar Es una Decisión de Adultos” (“Smoking Is an Adult Decision”). By 1991, Proesa developed a comprehensive campaign for radio and newspaper advertisements, and also a booklet aimed at parents [1].

In 1992-94, Ecuador became one of the countries targeted by the “Latin project” funded by Philip Morris International and British American Tobacco, in which the consultants representing a wide variety of scientific disciplines, including chemistry and biochemistry, epidemiology, oncology, and pulmonary and cardiovascular medicine were recruited to generate scientific arguments minimizing the role of secondhand smoke as a health hazard, to produce low estimates of exposure, and to lobby against smoke-free workplaces and public places [2].

In early 2001, Ecuador’s tobacco-control efforts were reported to show mixed results [3]. The process of FCTC ratification, as reported back in 2009, was “*not accompanied by a true commitment to adopt effective internal legislation*” [4]. Furthermore, “*The Ministry of Public Health had not pushed for better domestic tobacco legislation nor did it have the technical capacity to decisively influence policy. By contrast, Philip Morris (PM) ... was ready to act to minimize potential FCTC impacts. ... First, PM adopted a clever two-part legislative strategy that maximized its influence on the content of the legislation while minimizing the possibility that these weak norms would be strengthened in the future. Second, it adopted a public relations (PR) posture as a friend of the FCTC and tobacco control in Ecuador that lulled well-meaning but naive legislators into accepting PM’s legislative proposals.*”

Still, after the above-described changes, in 2015 [5], tobacco control policies in Ecuador were assessed at 30 out of 37 points.

### **Smoke-free places**

Smoking is prohibited in indoor workplaces, public places, and public transportation. There is one exemption to the smoking ban, which allows smoking in up to 10 percent of hotel guestrooms provided the rooms are designated to be smoking rooms only and comply with regulations. Smoking is also prohibited in outdoor areas of health facilities and primary and secondary educational facilities. Sub-national jurisdictions may adopt regulations that are more stringent.

### **Tobacco advertising, promotion, and sponsorship**

Most forms of tobacco advertising and promotion are prohibited with a few exceptions. Tobacco advertising is permitted inside places that may be accessed by adults (18+ years) only and through direct communication by email or the postal services, provided that the adult consumer requests to receive information in writing, and the consumer’s majority age is verified. Although sponsorship by the tobacco industry is only prohibited in part, all publicity of sponsorship is prohibited.

### **Tobacco packaging and labeling**

Tobacco product packages must contain text and pictorial health warnings covering 60 percent of both the front and back surfaces of the pack. Other qualitative health information must occupy 70 percent of one side panel of tobacco product packages. Misleading packaging and labeling, including terms such as “light” and “low tar” and other signs, is prohibited. Provisions regulating tobacco product packaging and labeling came into effect in July 2012. Ministry of Public Health Decision No. 407 on Approved Health Warnings established the first round of six health warnings for packs and other tobacco product

packaging. Several decisions have been issued establishing subsequent rounds of pictorial health warnings: Decision No. 2853 (second round), Decision No. 4723 (third round), Decision No. 5239 (fourth round), and Decision No. 24 (fifth round). With each round of health warnings, the Ministry of Public Health released manuals specifying the contents of the health warnings and the health information on toxic constituents and emissions to assist with implementation.

## **Tobacco use**

### **Tobacco use among adults**

A study conducted in 1988 [6, 7], found that 54% of Ecuadorian inhabitants had ever used tobacco while 13% were found addicted to tobacco. According to the same year Gallup data [8], 39% of men and 16% of women were current smokers.

In 1991, 800 adult persons (18 years and older) in the cities of Quito and Guayaquil were interviewed on smoking. About a third of them were cigarette smokers (45% men vs. 17% women) [9]. About 60% of smokers expressed a desire to quit smoking.

Within CARMELA project [10], a multistage, cross-sectional epidemiological study was conducted between September 2003 and August 2005 in several cities in Latin America. In Ecuador, 1638 urban dwellers aged 25-64 years from Quito city participated. The prevalence of current smoking among men was 49.4% (45.9%-52.9%) with a higher percentage of smokers among those aged 25-44 (over 51%); among women, 10.5% (7.8%-13.2%) were current smokers, and this was the lowest among all the participating Latin American cities. Respondents from Quito had also the lowest exposure to secondhand smoke at workplaces and the highest percentage of those who reported that smoking was not allowed at home.

Reproductive Health Survey was conducted in Ecuador among women aged 15-49 years in 2004: 13.1% were found to be current smokers, 13.3% former smokers. Unlike other countries, over two-thirds of women-current-smokers in Ecuador were occasional smokers. The reported number of cigarettes per day smoked by daily smokers was just 1.9. Women were more likely smokers if they lived in urban areas, had middle or high socioeconomic status, were previously married and did not have children below 5 years of age [11].

A survey of pregnant women in 2004-2005 [12, 13] found that 53.3% had smoked occasionally, and 4.3% -- regularly; of these, 75% had quit smoking before or during pregnancy. Having more education (11 or more years), being in the middle or upper socioeconomic classes, being Caucasian, and being of the opinion that it is acceptable for women in the community to smoke were significantly and directly associated with cigarette smoking ( $P < 0.001$ ). Overall, 12.9% of women were being exposed to secondhand smoke and this was significantly associated with being single and cohabiting with smokers or employees connected to the tobacco industry ( $P < 0.001$ ).

It was reported that in 2005 the prevalence of smoking was 7.9% among men and 1.9% among women [14].

The National surveys on drug use in the population aged 12 to 65 years were conducted in Ecuador in 2007<sup>6</sup> and 2013<sup>7</sup>. In 2007, the self-reported smoking (cigarettes or other type of tobacco) prevalence was:

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<sup>6</sup> [http://untobaccocontrol.org/impldb/wp-content/uploads/reports/Ecuador\\_annex4\\_household\\_survey2007.pdf](http://untobaccocontrol.org/impldb/wp-content/uploads/reports/Ecuador_annex4_household_survey2007.pdf)

<sup>7</sup> <http://www.prevenciondrogas.gob.ec/wp-content/uploads/downloads/2017/03/Cuarta-Encuesta-Nacional-sobre-uso-de-drogas-en-poblaci%C3%B3n-de-12-a-65-a%C3%B1os.pdf>

46.8% (lifetime), 25.2% (last year) and 18.4% (last month). In 2013, the prevalence decreased to 32.3% (lifetime), 11.4% (last year) and 8.1% (last month).

On May 31, 2017, to commemorate the World No Tobacco Day, the National Institute of Statistics and Censuses (INEC) released its data on smoking prevalence changes over the previous 16 years. In 1998, daily smoking prevalence among persons 15 years and older was 9.5%; in 1999 - 8.2%; in 2006 - 5.0% and in 2014 it reached 2.8%<sup>8</sup>. It was also reported that throughout Ecuador, 8.8% of the population over 12 years old currently consumed cigarettes, while in the Sierra region 10.7% of the population smoked.

The ESANUT survey conducted in Ecuador in 2011-2013<sup>9</sup> reported that among the population aged 20-59 years, 55% (81% men and 31% women) were ever smokers. Current (at least once in last 30 days) tobacco smoking was reported by 18% (31% among men and 5% among women), while only 26% of current smokers smoked daily, so the prevalence of daily smoking among people aged 20-59 years was about 5%.

According to published international estimates [15], the age-standardized adult smoking prevalence in Ecuador decreased from 9.5% in 1980-1996 to 6.5% in 2006-2012. In 2012, the prevalence was 10.3% among men and 3.0% among women.

In 2015, the WHO estimated<sup>10</sup> current smoking (any tobacco) prevalence among people aged 15 years and more to be 7.4% (12.7% among men and 2.1% among women). The prevalence of daily cigarette smoking was estimated to be 3.2% (5.4% among men and 0.9% among women).

### **Cigarette consumption**

Estimated cigarette consumption increased from 2.4 billion cigarettes in 1980 to 4.3 billion cigarettes in 2006 (which was mainly caused by the growth of population from 8 billion people in 1980 to 14 billion in 2006) and then decreased to 3.7 billion cigarettes in 2012 [15]. Other estimates of total cigarette consumption are as follows: 1970: 1.6bl; 1980: 3.9bl; 1990: 1.9bl; 2000: 2.1bl [16].

Estimated per capita cigarette consumption among adults (>15 years of age) from 1970-72 to 1990-92 increased from 650 to 870 cigarettes [17]. However, after 1990, the per capita consumption reduced to 250 cigarettes by the year 1999 [16].

### **Tobacco use among youth**

The Global Youth Tobacco Survey (GYTS) was conducted in Ecuador in cities Guayaquil, Quito<sup>11</sup>, and Zamora in 2001 and 2007, and then in 2016 as a national survey<sup>12</sup>.

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<sup>8</sup> <http://www.elcomercio.com/tendencias/consumo-diario-cigarrillo-ecuador-fumadores.html>

<sup>9</sup> <https://www.unicef.org/ecuador/esanut-2011-2013.pdf>

<sup>10</sup> [http://www.who.int/tobacco/surveillance/policy/country\\_profile/ecu.pdf](http://www.who.int/tobacco/surveillance/policy/country_profile/ecu.pdf)

<sup>11</sup> <https://nccd.cdc.gov/GTSSDataSurveyResources/Ancillary/Location.aspx?WHID=1&COID=152&LOID=84>

<sup>12</sup> <https://bibliotecapromocion.msp.gob.ec/greenstone/cgi-bin/library.cgi?e=d-11000-00---off-0promocin--00-1----0-10-0---0---0direct-10----4-----0-1l--11-es-50---20-help---00-3-1-00-00--4--0--0-0-11-10-0utfZz-8-00&a=d&c=promocin&cl=CL6&d=HASH0190092e87a099d21b5aab37>

**Table 1. Prevalence of tobacco-related behaviors among adolescents aged 13-15 years in Ecuador, %, GYTS**

	Quito		Guayaquil		Zamora		National
	2001	2007	2001	2007	2001	2007	2016
<b>Currently used any tobacco product</b> (at least once during the last 30 days)	<b>25,1</b>	<b>28,6</b>	<b>14,7</b>	<b>20,4</b>	<b>32,9</b>	<b>39,2</b>	<b>13,0</b>
<i>boys</i>		31,2	14,7	23,1		48,1	15,3
<i>girls</i>	17,1	26,1	14,5	16,8	30,8	31,7	10,7
<b>Currently smoked cigarettes</b> (at least once during the last 30 days)	<b>20,5</b>	<b>20,5</b>	<b>9,1</b>	<b>12,2</b>	<b>17,6</b>	<b>41,8</b>	<b>8,0</b>
<i>boys</i>	27,2	23,2	9,1	13,6	18,9	47,9	8,9
<i>girls</i>	12,6	18,1	9,0	9,4	16,5	35,9	7,0
<b>Lived in homes where others smoke in their presence</b>	<b>36,1</b>	<b>28,9</b>	<b>31,3</b>	<b>28,3</b>	<b>41,8</b>	<b>38,7</b>	<b>16,7</b>
<b>Had at least one parent who smoked</b>	<b>49,3</b>	<b>39,1</b>	<b>38,6</b>	<b>30,2</b>	<b>46,3</b>	<b>40,8</b>	

Tobacco use and cigarette smoking among young people increased between 2001 and 2007 but substantially decreased in 2016 [18]. Percentage of teenagers, who lived in homes where others smoke in their presence, decreased already in 2007 and especially in 2016. Percentage of smoking parents also declined in 2007, and this can be considered an indirect indicator of smoking behavior among adults.

The Global School-based Health Survey (GSHS) was conducted in Ecuador in the same cities in 2007 [19]. Interestingly, in the city of Zamora which is situated to the east of the mountain range and closer to the border with Peru, in both surveys (GYTS and GSHS), the prevalence of smoking was the highest ( $32.7 \pm 11.1\%$  among boys and  $12.3 \pm 7.4\%$  among girls in GSHS). The lowest of the three cities prevalence of smoking was found in both GYTS and GSHS in the city Guayaquil situated closer to the ocean ( $13.6 \pm 3.3\%$  among boys and  $7.2 \pm 2.7\%$  among girls in GSHS).

## Tobacco taxation

Tobacco products in Ecuador are levied by excise called a special consumption tax. In 2005-2008, this tax was ad valorem with a rate of 98%. The tax base was the retail price deducted by VAT and excise rates. In 2006, a minimum specific excise rate was established<sup>13</sup>, which was 0.50821 USD per pack of 20 cigarettes. In 2008, the ad valorem rate for all kinds of tobacco products was increased to 150%<sup>14</sup>. The actual ad valorem rate was about 55% of the final retail price [20].

<sup>13</sup> RESOLUCIÓN No. NAC-DGER2006-0685 (FIJACIÓN DEL VALOR A PAGARSE POR IMPUESTO A LOS CONSUMOS ESPECIALES EN LA VENTA DE CIGARRILLOS RUBIOS)  
<https://www.tobaccocontrollaws.org/files/live/Ecuador/Ecuador%20-%20Res.%20No.%202006-0685%20-%20national.pdf>

<sup>14</sup> LEY DE RÉGIMEN TRIBUTARIO INTERNO SEGÚN LAS REFORMAS DE LA LEY REFORMATIVA PARA LA EQUIDAD TRIBUTARIA DEL ECUADOR Año I -- Quito, Sábado 29 de Diciembre del 2007 -- Nº 242

In November 2011, the amendments to the taxation legislation were adopted<sup>15</sup>. Excise for cigarettes was changed from ad valorem to specific, while remained the same (150% ad valorem) for other tobacco products. Specific excise rate was set as 0.08 USD per 1 cigarette from 1 December 2011, and it was set that the specific cigarette rate would be adjusted every six months depending on the variation of the consumer price index (CPI), discounted by the effect of the increase of the tax itself. The new rates must be published by the Internal Revenue Service in June and December each year to be valid from the first calendar day of the following month. Specific excise rates for cigarettes effective from December 2011 are presented in Table 2.

**Table 2. Specific excise rates for cigarettes in Ecuador in 2011-2018**

	1 December 2011	1 July 2012	1 January 2013	1 July 2013	1 January 2014	1 July 2014	1 January 2015	1 July 2015	From May 2016
Excise rate (US dollars per 1 cigarette)	0,08	0,081	0,081	0,0862	0,0862	0,0925	0,131	0,1324	0,16

The Internal Revenue Service regularly published resolutions with new excise rates. In December 2014<sup>16</sup>, the parliament increased the excise rate to 0.131 USD, well above the CPI increase.

On April 29, 2016, the “Organic law for the balance of public finances” was adopted, which increased the rate to 0.16 USD per 1 cigarette. As the inflation rate in late 2016 and 2017 had negative values, the rate has not been increased and from 1 January 2018, it is still 0.16 USD<sup>17</sup>.

According to the Solidarity Contribution Law for the Reconstruction and Reactivation of the Zones Affected by the Earthquake of 16 April 2016, which was published in Official Gazette Supplement No. 759 on 18 May 2016, the VAT rate was increased from 12% to 14% for one year from 1 June 2016. On 1 June 2017, the VAT rate returned to 12%<sup>18</sup>.

### **Tobacco excise revenue**

According to the Internal Revenue Service database<sup>19, 20</sup>, tobacco excise revenue increased from about USD70 million annually in 2005-2007 to USD119 million in 2009-2010 after the increase of the ad valorem rate from 98% to 150% in 2008 (Figure 1).

<https://www.tobaccocontrollaws.org/files/live/Ecuador/Ecuador%20-%20Amdts.%20to%20Internal%20Taxation%20Law%20-%20national.pdf>

<sup>15</sup> <http://www.sri.gob.ec/DocumentosAlfrescoPortlet/descargar/a2d9e000-58d0-424d-b7e2-6ec0b7d270e3/Ley+del+Impuesto+Ambiental+a+la+Contaminaci%F3n+Vehicular+%28IACV%29.pdf>

<sup>16</sup> Law 405-S of 29.12.2014

[http://2013-2017.observatoriolegislativo.ec/media/archivos\\_leyes/registro.fraude\\_fiscal.pdf](http://2013-2017.observatoriolegislativo.ec/media/archivos_leyes/registro.fraude_fiscal.pdf)

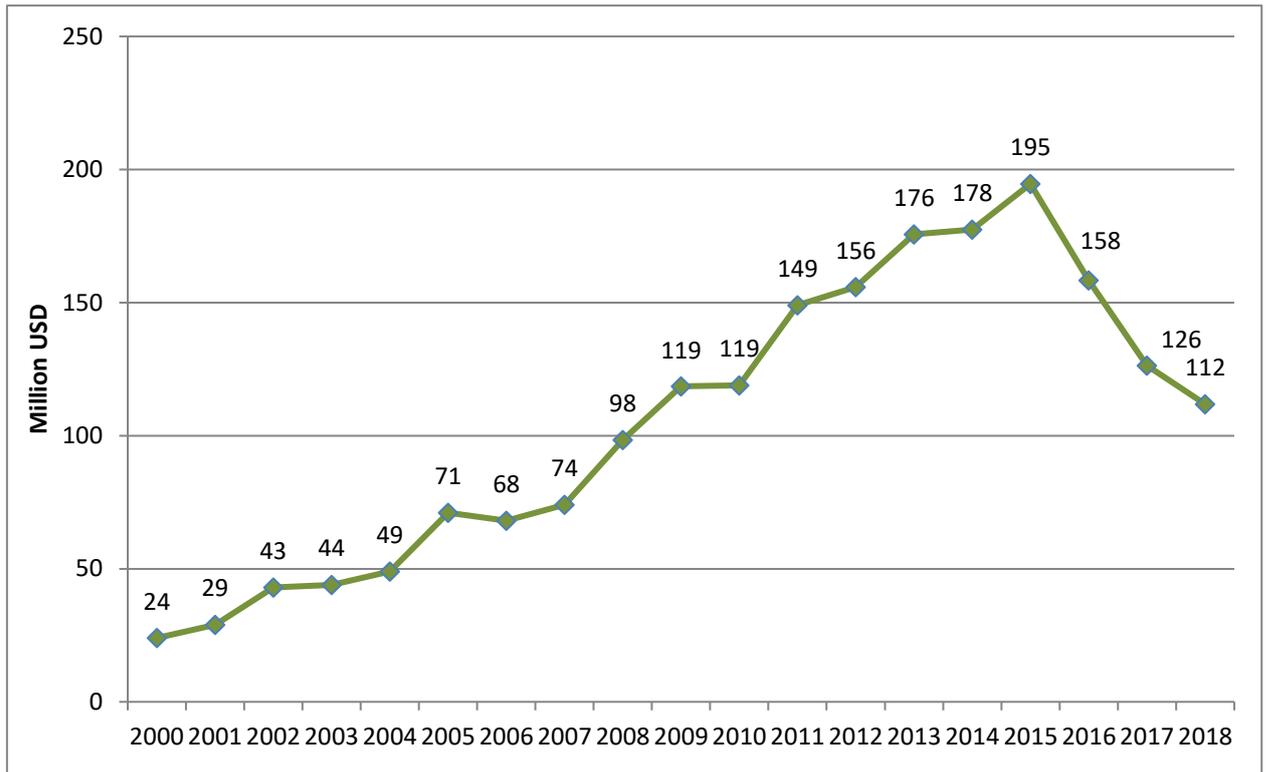
<sup>17</sup> Resolución No. NAC-DGERCGC17-00000621, Suplemento Registro Oficial 149 de 28 de diciembre de 2017. <http://www.sri.gob.ec/DocumentosAlfrescoPortlet/descargar/6951efbd-2675-4a0e-a0e7-2b01f3b3cabb/NAC-DGERCGC17-00000621.pdf>

<sup>18</sup> <https://www.ey.com/gl/en/services/tax/international-tax/alert--ecuador-reduces-vat-rate>

<sup>19</sup> <http://www.sri.gob.ec/web/guest/estadisticas-generales-de-recaudacion;jsessionid=2rJDdpzFdE+h7B-8l7jao7Wf>

<sup>20</sup> [http://www.sri.gob.ec/BibliotecaPortlet/descargar/dfad944c-167d-4dbe-89f4-12e77015bf40/ESTAD%CDSTICAS+DE+RECAUDACI%D3N\\_DICIEMBRE+2017.xlsx](http://www.sri.gob.ec/BibliotecaPortlet/descargar/dfad944c-167d-4dbe-89f4-12e77015bf40/ESTAD%CDSTICAS+DE+RECAUDACI%D3N_DICIEMBRE+2017.xlsx)

Figure 1. Tobacco excise revenue in Ecuador, million USD

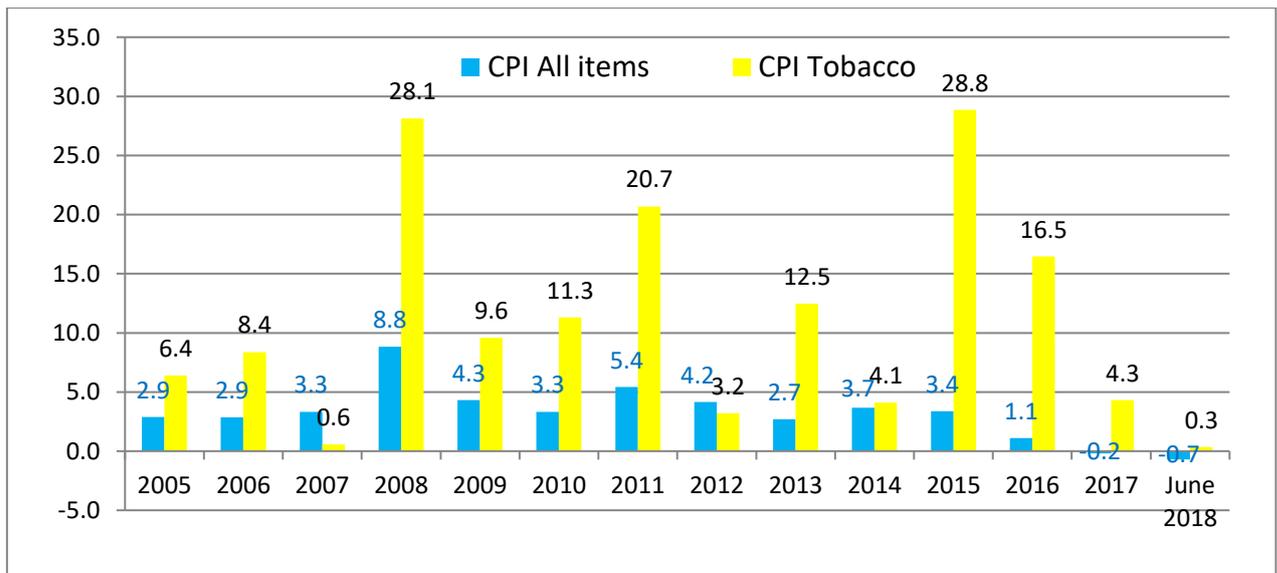


In 2011-2015, the revenue increased from 119 million to 195 million USD or by 64% in five years due to an excise rate increase in those years (see Table 2). However, in 2016-2018, the revenue sharply decreased to 112 million USD (Figure 1).

### Cigarette prices

According to the National Institute of Statistics and Census database, in 2005-2018, the increase in tobacco prices usually exceeded the consumer price index for all items (the inflation rate) (Figure 2).

Figure 2. Consumer price indices (CPI), annual growth in %



Source: the National Institute of Statistics and Census database

[http://www.ecuadorencifras.gob.ec/documentos/web-inec/Inflacion/2018/Junio-2018/Historicos\\_completo/SERIES%20IPC%20EMPALMADAS/ipc\\_var\\_anu\\_nac\\_reg\\_ciud\\_emp\\_clase\\_06\\_2018.xls](http://www.ecuadorencifras.gob.ec/documentos/web-inec/Inflacion/2018/Junio-2018/Historicos_completo/SERIES%20IPC%20EMPALMADAS/ipc_var_anu_nac_reg_ciud_emp_clase_06_2018.xls), accessed on August 4, 2018

The highest cigarette price increases were observed in 2008, 2011, 2015 and 2016, after the corresponding cigarette excise rate increases. In 2010-2016 combined, the tobacco prices increased by 144%, although inflation (CPI all\_items) was only 26%.

Cigarettes of brand “Lider” constituted about 60% of the cigarette market in Ecuador over recent years. Prices of this brand (taken from the WHO Tobacco Control report, FCTC reports, Euromonitor, and other sources) are presented in Table 3.

**Table 3. Prices and taxes for Lider cigarette brand**

	2006	2010	2011	2012	2013	2014	2015	2016	2017	2018
<b>Retail price, pack of 20 cigarettes, USD</b>	<b>1,15</b>	<b>1,7</b>	<b>2,0</b>	<b>2,6</b>	<b>3,0</b>	<b>3,6</b>	<b>4,25</b>	<b>5,2</b>	<b>5,4</b>	<b>5,4</b>
<b>The price increase, %</b>		<b>47,8</b>	<b>17,6</b>	<b>30,0</b>	<b>15,4</b>	<b>20,0</b>	<b>18,1</b>	<b>22,4</b>	<b>3,8</b>	
<i>Ad valorem, % of final price</i>		53,6	55,0							
Specific excise, USD per pack	0,50 8			1,62	1,724	2,15	2,648	3,20	3,20	3,20
VAT, % of final price	10,7 1	10,7 1	10,7 1	10,71	10,71	10,71	10,71	12,28	10,71	10,71
VAT, USD per pack			0,24	0,28	0,32	0,39	0,46	0,64	0,58	0,58
<b>Total tax (excise + VAT) share, %</b>	<b>54,9</b>	<b>64,3</b>	<b>65,7</b>	<b>73,0</b>	<b>68,2</b>	<b>70,4</b>	<b>73,0</b>	<b>73,8</b>	<b>70,0</b>	<b>70,0</b>
Net-of-tax price, USD per pack	0,52	0,61	0,69	0,70	0,95	1,07	1,15	1,36	1,62	1,62
<i>Net-of-tax price increase, %</i>		17,1	12,9	2,3	36,1	11,7	7,6	18,7	19,1	

In 2012-2017, the retail price of the *Lider* cigarette pack increased by 108%: from 2.6 to 5.4 USD per pack. The excise tax rate increased by 98%. The net-of-tax cigarette price increased by 131%; yet, the inflation rate in those six years was only 10%. Total tax (excise + VAT) share in 2012-2017 even decreased from 73% to 70% which means that the industry increased its price faster than the government increased the taxes. In 2017, the tax burden for cigarettes decreased as the VAT rate was reduced from 14% to 12%; however, the industry increased the net-of-tax price anyway.

So, the sizable increase in cigarette price in 2012-2016 was only partly caused by the increase in excise rate. The other two important factors were: the increase in the VAT rate in 2016 and the pricing policy of the tobacco industry.

### Tobacco affordability

The Guidelines for implementation of Article 6 of the WHO FCTC [21] recommend: “When establishing or increasing their national levels of taxation Parties should take into account – among other things – ... changes in household income, to make tobacco products less affordable over time in order to reduce consumption and prevalence”. In the Guidelines, “affordability” means price relative to per capita income. In the current analysis, a modified tobacco affordability index (TAI) [22] is used to estimate the changes in tobacco affordability in 2007–2017. TAI is calculated as the percentage annual change in nominal average income per capita divided by the tobacco price increase:  $TAI = (\text{income increase}/\text{consumer price index tobacco} - 1) * 100$ . A negative TAI value means that tobacco became less affordable, and tobacco consumption is expected to decrease. For the TAI calculations, we used the National Institute of Statistics and Census data on household nominal average income per capita and the annual CPI for tobacco products. For control, we also used as income proxy the World Bank indicator “Annual percentage growth rate of GDP per capita based on constant local currency”<sup>21</sup>. As the GDP change is expressed in constant

<sup>21</sup> <https://data.worldbank.org/indicator/NY.GDP.PCAP.KD.ZG?locations=EC>

(adjusted for the effects of price inflation) local currency, the price indicator is also expressed in real (inflation-adjusted) terms. In this case, the TAI is calculated as GDP annual change divided by the (inflation-adjusted) tobacco price increase minus 100:  $(\text{GDP growth} * \text{CPI\_all\_items} / \text{CPI\_tobacco} - 100)$ . The results of the Tobacco Affordability Index estimation are presented in Table 4.

**Table 4. Tobacco affordability in Ecuador in 2007-2017**

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Average income per capita, USD	143,2	134,9	127,6	139,1	142,2	147,9	156,4	158,5	161,5	155,7	
<i>Income change</i>	<i>x</i>	<i>94,2</i>	<i>94,6</i>	<i>109,0</i>	<i>102,2</i>	<i>104,0</i>	<i>105,7</i>	<i>101,3</i>	<i>101,9</i>	<i>96,4</i>	
CPI all items, previous year = 100	103,3	108,8	104,3	103,3	105,4	104,2	102,7	103,7	103,4	101,1	99,8
CPI tobacco, previous year = 100	100,6	128,1	109,6	111,3	120,7	103,2	112,5	104,1	128,8	116,5	104,3
<b>TAI - income</b>	<b>x</b>	<b>-26,5</b>	<b>-13,7</b>	<b>-2,1</b>	<b>-15,3</b>	<b>0,8</b>	<b>-6,0</b>	<b>-2,7</b>	<b>-20,9</b>	<b>-17,2</b>	
GDP per capita growth (annual %)	6,3	4,6	-1,1	1,8	6,1	4,0	3,3	2,2	-1,4	-2,7	0,9
<b>TAI - GDP</b>	<b>9,2</b>	<b>-11,2</b>	<b>-5,9</b>	<b>-5,5</b>	<b>-7,3</b>	<b>5,0</b>	<b>-5,7</b>	<b>1,8</b>	<b>-20,9</b>	<b>-15,5</b>	<b>-3,5</b>

Tobacco affordability was gradually reduced in Ecuador from 2008. However, the largest reduction in tobacco affordability was observed in 2015 and 2016.

### Tobacco growing

According to the FAO database [23], raw tobacco production in Ecuador increased from 851 tons in 1961 to almost 9,391 tons a year in 2016, and the area harvested for tobacco increased from 1,000 hectares in 1990 to 4,163 hectares in 2000. Further on, in 2000-2016, area and raw tobacco production were rather stable: about 8,000-9,000 tons and 4,000-4,500 hectares annually. A large part of raw tobacco is exported for cigar production.

### Cigarette production and sales

More than 99% of tobacco in Ecuador is consumed as manufactured cigarettes, so we consider only cigarette production and sales.

In 2017, Tabacalera Andina, the local subsidiary of Philip Morris International, got its monopoly in cigarette production in Ecuador as British American Tobacco exited the country. PMI factory in Durán processes tobacco, while the Quito factory manufactures cigarettes.

In 2005-2010, cigarette sales in Ecuador gradually decreased from 3.3 billion to 2.8 billion cigarettes [24] (Table 5). In 2010-2014, sales declined to 2.1 billion cigarettes or by 25% in four years. The sharpest reduction of cigarette sales was observed in 2014-2017: in 2017, according to Euromonitor report, only 915 million cigarettes were sold, which reflected a 56% reduction in three years.

**Table 5. Cigarette production and sales in Ecuador, million cigarettes**

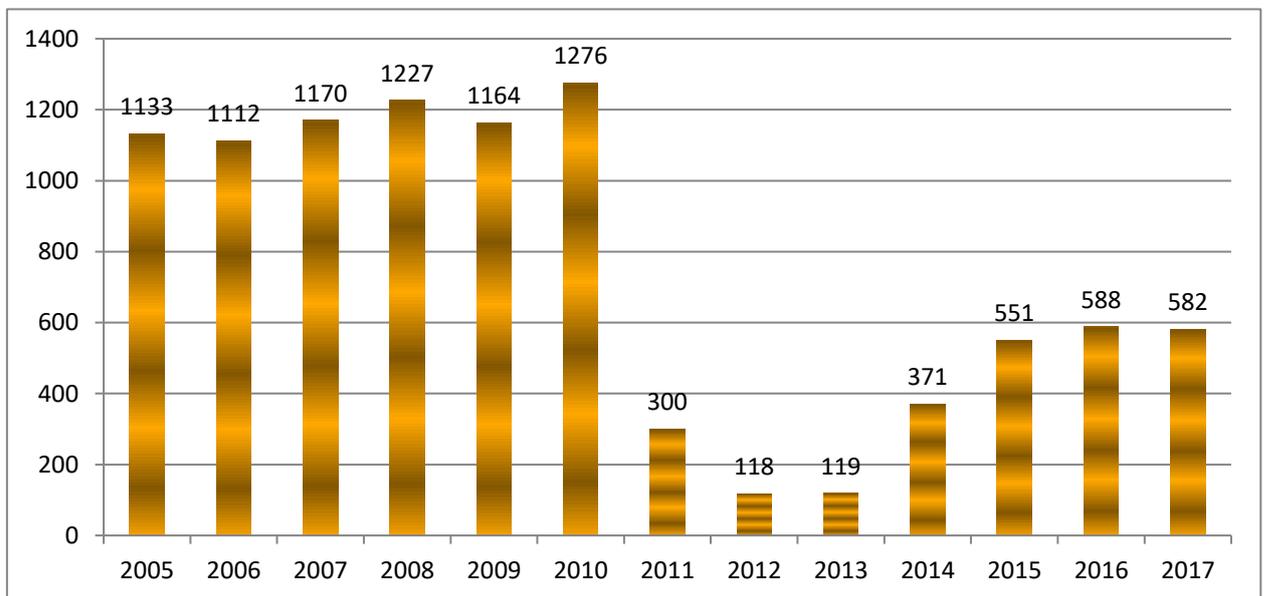
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Production, UN database <sup>22</sup> , Trujillo [25]	2876	2890	3175	2018		2398	2590	2205	2163	2036	1491	985	756	
<b>Taxable sales</b>								<b>1935</b>	<b>2117</b>	<b>1972</b>	<b>1474</b>	<b>1097</b>	<b>789</b>	<b>699</b>
Production, Euromonitor	3479	3534	3547	3393	3325	3098		2399	2273	2117	1581	1100	1024	
Turnover (production + import – export), Euromonitor								2179	2156	2105	1473	1003	930	
Licit sales, Euromonitor	3307	3117	2749	2931	2872	2822		2381	2256	2102	1569	1092	915	

Cigarette turnover (production + import – export) in 2011-2014 and 2017 was lower than the licit cigarette sales, as reported by Euromonitor. Probably, some produced and imported cigarettes were actually sold during the subsequent year.

Estimated taxable cigarette sales, calculated as cigarette excise revenue (see Figure 1) divided by the specific excise rate (from Table 2), are also lower than the sales reported by Euromonitor. In 2012-2017 combined, the number of taxed cigarettes was 9.4 billion, while the number of cigarettes sold was 10.3 billion, 0.9 billion cigarettes more. Official cigarette production in 2012-2017 was 9.6 billion cigarettes, which is also higher than the estimated number of taxed cigarettes. Probably, cigarette corporations used forestalling (in anticipation of tax increases they increased the stock of products) starting in late 2011, when the substantial excise hike was adopted. In the 2014-2018, taxable sales decreased by 65%.

### Cigarette smuggling

Estimates of cigarette smuggling into Ecuador are presented in the Euromonitor reports (Figure 3).

**Figure 3. Euromonitor estimates of cigarettes smuggled into Ecuador, million cigarettes**

In the report published in 2011 [24], the Euromonitor estimated the smuggling volume in 2010 to be 1,276 million cigarettes and claimed: *Tax hikes are the main reason for illicit trade growth in 2010 and with the scheduled tax review (and expected increase) in the first months of 2011 illicit trade is expected to increase*

<sup>22</sup> <http://data.un.org/Data.aspx?q=cigarettes&d=ICS&f=cmID%3a25010-1>

more. However, in a report published in 2018, they estimated that the smuggling volume in 2012 and 2013 was about 120 million cigarettes (less than 10% of what was estimated for 2010) despite the increase of tax rates (see Table 2). In 2014 and 2016, the estimated smuggling increased to 551 million cigarettes in 2015, but it was rather stable in 2015-2017 despite the sharp decline in the licit cigarette sales in those years (see Table 5). In 2011, cigarette smuggling volume was estimated to be 300 million cigarettes<sup>23</sup>.

Most probably, Euromonitor overestimated the volumes of cigarettes smuggled in Ecuador, as it did in many other countries [26]. Anyway, Euromonitor had to admit that total (licit + illicit) cigarette consumption in Ecuador sharply declined in 2012-2017: at least from 2.5 billion to 1.5 billion cigarettes.

Cigarette smuggling into Ecuador does take place as cigarettes are more expensive in Ecuador than in neighboring countries. According to the WHO Report [20], in 2016, the price of a pack of the most popular cigarettes was 5.2 USD in Ecuador, but 0.88 USD in Columbia and 3.13 USD in Peru. Such a situation was partly caused by the depreciation of the Colombian peso against the US dollar, which puts Colombian products at a significantly lower price point. Some Chinese cigarette brands are also reported to be smuggled to Ecuador via free-trade zones in Panama<sup>24</sup>.

The cigarettes that come from Colombia become the target for the combined forces that fight contraband in the border area<sup>25</sup>. In 2017, more than 1 600 thousand packs of cigarettes of various brands were seized<sup>26</sup>.

In September 2018, Mauricio Sáenz, director of Corporate Affairs for Tobacco and Alcohol Industries (Itabsa) presented research conducted by the agency MS Intelligence<sup>27</sup>. According to the research results, the proportion of illicit cigarette smuggling increased from 18.6% in 2015 to 55.2% in 2018. The data for the research were provided by Tanasa and Proesa, firms affiliated with Philip Morris International<sup>28</sup>. It was claimed that *“the legal tobacco industry has reduced its share of the cigarette market, but it does not mean lower consumption”*<sup>29</sup>. However, in 2015, 1,474 million legal cigarettes were sold (Table 5) and, with illicit trade share 18.6%, the total consumption would be  $1,474 / (1-0.186) = 1,811$  million cigarettes. In 2018, 699 million legal cigarettes were sold, so the total consumption should be  $699 / (1-0.552) = 1,560$  million cigarettes. So, even by the tobacco industry data, cigarette consumption did decline in Ecuador.

A recent review of tobacco industry reports on illicit tobacco trade shows that such reports routinely overestimate the illicit trade, feature substantial methodological problems and fail to meet the standards of accuracy and transparency that are set by high-quality research publications. The primary purpose of tobacco industry-funded estimates on illicit tobacco trade is likely to create a platform for the industry's lobbying and public relations strategies [27].

The tobacco industry tries to persuade that the main cause of smuggling is a “too high” excise tax in Ecuador. However, according to a report presented by an MS Intelligence agency, 70% of smuggled

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<sup>23</sup> <https://www.lahora.com.ec/noticia/1101325011/oferta-de-cigarrillos-de-contrabando-crecic3b3->

<sup>24</sup> <https://lahora.com.ec/noticia/1102157448/policia-encuentra-100000-unidades-de-cigarrillo-en-un-taxi-abandonado-en-pichincha>

<sup>25</sup> <https://lahora.com.ec/noticia/1101967168/cigarrillos-extranjeros-en-la-mira-de-las-autoridades-aduaneras->

<sup>26</sup> <https://lahora.com.ec/carchi/noticia/1102108609/contrabando-de-cigarrillos-preocupa-a-las-autoridades-fronterizas->

<sup>27</sup> <https://www.eltelegrafo.com.ec/noticias/economia/4/venta-industria-tabacalera-ecuador>

<sup>28</sup> <https://www.metroecuador.com.ec/ec/noticias/2019/05/08/contrabando-cigarrillos-venta-informal-genera-cuanto-pierde-estado.html>

<sup>29</sup> <https://www.expreso.ec/economia/cigarrillo-tabaco-impuestos-economia-finanzas-ecuador-AH2678064>

cigarettes are Chinese, and the price of the main smuggled brand Silver Elephant is 1.20 USD<sup>30</sup>. The net-of-tax price of legal cigarettes is 1.62 USD (Table 3). Even if the cigarette excise was totally canceled, the price of legal cigarettes would be 1.80 USD (net-of-tax price + VAT), which is 50% more than the price of smuggled cigarettes, so most smokers of illicit cigarettes would not switch to legal brands. So, the reduction of the cigarette excise tax is not a solution for the smuggling problem.

Since March 2017, the Internal Revenue Service (SRI) has applied the Identification, Marking, Authentication, Tracking and Tax Tracking System (SIMAR) for domestic cigarettes, beers, and alcoholic beverages, "in order to reduce the accessibility and affordability of tobacco products, as well as to protect public revenues". The World Health Organization admitted that the SIMAR "has become an example for other countries in the region"<sup>31, 32</sup>. The main objective of SIMAR is to maintain greater control of excise payments and combat tax evasion. It also seeks to detect products of dubious origin. The detailed rules of SIMAR are presented on the official site of the Internal Revenue Service<sup>33</sup> and in the paper by Trujillo [25]. In 2017, 39,606 million excise stamps were issued for cigarettes<sup>34</sup>. In January-May 2018, 25,633 million excise stamps were issued for cigarettes<sup>35</sup>.

## Discussion

Since 2011, Ecuador has conducted a very strong tobacco control policy. A comprehensive tobacco control law was adopted and implemented. Tobacco tax rates were periodically increased, and in 2011-2016, specific excise rate was increased by 100%: from 0.08 to 0.16 USD per 1 cigarette.

Smoking prevalence substantially decreased both among adults and youth. Cigarette sales in the country have been declining at least since 2005; however, the sharpest reduction in cigarette sales was observed in 2016 and 2017.

The recent reduction of cigarette sales was so sizable that the tobacco excise revenue in 2016 and 2017 decreased after the continuous growth in 2000-2015. The sharp reduction of tobacco sales in 2016 and 2017 was caused by the substantial reduction in tobacco affordability due to the combined effect of the cigarette price growth and the population income decline.

While the increase of tobacco excise rate from 0.1324 to 0.16 USD per 1 cigarette or by 21% was the main factor of the cigarette price growth in 2016, two other factors also contributed to this price hike: (1) the increase of the VAT rate by one-sixth in 2016; (2) the increase of the industry (net-of-tax) part of the price by 19% in 2016 (see Table 3).

The main factor of the population income reduction was the earthquake of 16 April 2016. The President of Ecuador has estimated the damage to be USD3 billion and has obtained credits from the World Bank,

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<sup>30</sup> <https://www.eltelegrafo.com.ec/noticias/economia/4/venta-industria-tabacalera-ecuador>

<sup>31</sup> <https://www.eluniverso.com/noticias/2017/05/31/nota/6209026/oms-premia-ecuador-su-lucha-contra-tabaquismo>

<sup>32</sup> [https://www.paho.org/hq/index.php?option=com\\_content&view=article&id=13381%3Acolombia-ecuador-y-peru-recibiran-el-premio-del-dia-mundial-sin-tabaco-de-la-oms&catid=740%3Apress-releases&Itemid=1926&lang=pt](https://www.paho.org/hq/index.php?option=com_content&view=article&id=13381%3Acolombia-ecuador-y-peru-recibiran-el-premio-del-dia-mundial-sin-tabaco-de-la-oms&catid=740%3Apress-releases&Itemid=1926&lang=pt)

<sup>33</sup> <http://www.sri.gob.ec/web/guest/simar>

<sup>34</sup> <http://www.sri.gob.ec/DocumentosAlfrescoPortlet/descargar/8ffb1d87-4a16-45b7-92cc-1b185fefcaf6/Estad%3%adsticac%20Marcac%3%b3n%20SIMAR%202017.pdf>

<sup>35</sup> <http://www.sri.gob.ec/DocumentosAlfrescoPortlet/descargar/8e7fa02e-408e-4600-91a4-811caddb2802/Estad%3%adsticac%20Marcac%3%b3n%20SIMAR%20A%3%b1o%202018.pdf>

Inter-American Development Bank, and other sources, anticipated to reach a total of USD2 billion; national sales tax has been raised as have income taxes on Ecuadorians<sup>36</sup>.

Such a sharp reduction of cigarette affordability in 2016 also affected cigarette sales in 2017. There was no increase in cigarette excise in 2017, and the VAT rate was reduced back from 14% to 12%, but the industry increased its part of the price by 13% in 2017 (see Table 3), and this further reduced tobacco affordability in the country.

The affordability-driven reduction of cigarette sales was much larger than the increase of cigarette excise rate in 2016, and in such a situation, cigarette excise revenue declined.

Price elasticity of demand for cigarettes in Ecuador was estimated using cross-sectional data from the National Survey of Urban and Rural Household Income and Expenditures (ENIGHUR) 2011-2012 and it was -0.87 [28], meaning that a 10% price increase could lead to an 8.7% decrease in consumption. In 2010-2016, the tobacco prices in Ecuador increased by 144% with the inflation rate in those years equal to 26%, so real (inflation-adjusted) prices increased by 93% over seven years. With price elasticity -0.87 the tobacco consumption in 2010-2016 was to decrease by:  $93\% \times 0.87 = 68\%$ . In 2007-2010, annual consumption was about 3 billion cigarettes (licit and illicit). With the reduction of tobacco consumption equal to 68%, in 2017, annual consumption should be about 1 billion cigarettes (licit and illicit), which is close to the real situation in 2017 (0.8 billion licit + 0.2 billion illicit cigarettes).

While the increases in cigarette prices in recent years could encourage cigarette smuggling into Ecuador, the smuggling growth was only a minor factor in the decline in cigarette sales in 2016-2017. The government of Ecuador introduced strong policies against tobacco smuggling in 2017, and even according to Euromonitor estimates, there were no increases in the smuggled cigarette numbers in 2017 (see Figure 3).

Paradoxically, by raising prices the industry engineered a greater decrease in cigarette consumption than the tax increase alone [29]. The pricing policy of the tobacco industry also increased the price differences between legal and smuggled cigarettes, and in such a way it contributed to the increase of cigarette smuggling into Ecuador.

In 2011 and 2012, about 2,000 million cigarettes were taxed in Ecuador annually (Table 5) with the average net-of-tax price being USD0.70 per pack (see Table 3). The industry part of the market was:  $2,000 \times 0.70 / 20 = \text{USD}70$  million. In 2016 and 2017, taxable sales decreased to 1,097 million cigarettes and 789 million cigarettes, with the average net-of-tax price being USD1.36 and 1.62 USD per pack. The industry part of the market was:  $1,097 \times 1.36 / 20 = \text{USD}75$  million in 2016 and  $789 \times 1.62 / 20 = \text{USD}70$  million in 2017. As production and distribution costs of 1 billion cigarettes are lower than such costs for 2 billion cigarettes, the tobacco industry profits in 2012-2017 apparently increased despite the sharp reduction in cigarette sales.

## Conclusions

Tobacco control policy in Ecuador was very effective for the reduction of smoking prevalence and tobacco consumption. According to the official estimates, only 2.8% of adults were daily smokers in 2014.

Estimated annual cigarette consumption in Ecuador declined from about three billion cigarettes in 2007-2010 to about one billion cigarettes in 2017.

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<sup>36</sup> [https://en.wikipedia.org/wiki/2016\\_Ecuador\\_earthquake](https://en.wikipedia.org/wiki/2016_Ecuador_earthquake)

Tobacco excise revenue increased by 64% in 2010-2015 due to the strong taxation policy. Some decline in tobacco excise revenue was observed in 2016, but it was caused by a sharp reduction of tobacco affordability after the earthquake of April 2016 and the consequent decline of cigarette sales. As cigarette excise rates were not increased in 2017 and 2018, and cigarette sales continued to decline due to their reduced affordability, the governmental excise revenue also declined in 2017 and 2018.

The pricing policy of the tobacco industry also contributed to the reduction in cigarette affordability and cigarette sales in Ecuador. However, due to such pricing policy, the tobacco industry apparently increased its profits despite the sharp decline in cigarette sales in the country.

## Recommendations

- Specific excise rate for cigarettes should be annually increased by at least 20% to ensure the reduction in tobacco affordability and the increase in the excise revenues.
- Tobacco use surveillance and monitoring should be further developed in Ecuador, including a regular collection of information on smoking prevalence, tobacco consumption, licit and illicit cigarette sales, prices and other economic indicators.
- Effective policies to counteract tobacco smuggling and other kinds of illicit tobacco sales should be implemented in line with the provisions of the FCTC Protocol to Eliminate Illicit Trade in Tobacco Products, which is already ratified by the country.

## References

1. Sebrie, E.M. and S.A. Glantz, *Attempts to undermine tobacco control: tobacco industry "youth smoking prevention" programs to undermine meaningful tobacco control in Latin America*. Am J Public Health, 2007. **97**(8): p. 1357-67.
2. Barnoya, J. and S. Glantz, *Tobacco industry success in preventing regulation of secondhand smoke in Latin America: the "Latin Project"*. Tob Control, 2002. **11**(4): p. 305-14.
3. Stebbins, K.R., *Going like gangbusters: transnational tobacco companies "making a killing" in South America*. Med Anthropol Q, 2001. **15**(2): p. 147-70.
4. Albuja, S. and R.A. Daynard, *The Framework Convention on Tobacco Control (FCTC) and the adoption of domestic tobacco control policies: the Ecuadorian experience*. Tob Control, 2009. **18**(1): p. 18-21.
5. Heydari, G., et al., *Comparison of Tobacco Control Programs Worldwide: A Quantitative Analysis of the 2015 World Health Organization MPOWER Report*. Int J Prev Med, 2016. **7**: p. 127.
6. Aguilar, E., *Prevalence of the improper use of alcohol, tobacco, and drugs in the Ecuadorian population*. Bull Pan Am Health Organ, 1990. **24**(1): p. 35-8.
7. Aguilar, E., *[Prevalence of the improper use of alcohol, tobacco and drugs in the Ecuadorian population]*. Bol Oficina Sanit Panam, 1989. **107**(6): p. 510-3.
8. *Smoking and Health in the Americas. A 1992 Report of the Surgeon General, in collaboration with the Pan American Health Organization*. Report of the Surgeon General 1992; Available from: <https://profiles.nlm.nih.gov/ps/access/NNBBBJ.pdf>.
9. Ockene, J.K., D.E. Chiriboga, and J.C. Zevallos, *Smoking in Ecuador: prevalence, knowledge, and attitudes*. Tobacco Control, 1996. **5**(2): p. 121-126.
10. Champagne, B.M., et al., *Tobacco smoking in seven Latin American cities: the CARMELA study*. Tob Control, 2010. **19**(6): p. 457-62.
11. Tong, V.T., et al., *Patterns and predictors of current cigarette smoking in women and men of reproductive age-Ecuador, El Salvador, Guatemala, and Honduras*. Rev Panam Salud Publica, 2011. **30**(3): p. 240-7.

12. Poletta, F.A., et al., *[Smoking and exposure to tobacco smoke among pregnant women in Ecuador]*. Rev Panam Salud Publica, 2010. **27**(1): p. 56-65.
13. Bloch, M., et al., *Tobacco use and secondhand smoke exposure during pregnancy: an investigative survey of women in 9 developing nations*. Am J Public Health, 2008. **98**(10): p. 1833-40.
14. Muller, F. and L. Wehbe, *Smoking and smoking cessation in Latin America: a review of the current situation and available treatments*. Int J Chron Obstruct Pulmon Dis, 2008. **3**(2): p. 285-93.
15. Ng, M., et al., *Smoking prevalence and cigarette consumption in 187 countries, 1980-2012*. JAMA, 2014. **311**(2): p. 183-92.
16. Guindon, G.E. and D. Boisclair *Past, current and future trends in tobacco use*. 2003.
17. da Costa e Silva, V.L. and S. Koifman, *Smoking in Latin America: a major public health problem*. Cad Saude Publica, 1998. **14 Suppl 3**: p. 99-108.
18. Ceron, D., et al., *Global youth tobacco survey in Ecuador 2016-2017*. Tobacco Induced Diseases, 2018. **16**(1).
19. Page, R.M. and M. Danielson, *Multi-country, cross-national comparison of youth tobacco use: findings from global school-based health surveys*. Addict Behav, 2011. **36**(5): p. 470-8.
20. World Health Organization. *WHO report on the global tobacco epidemic 2017. Monitoring tobacco use and prevention policies*. 2017; Available from: [http://www.who.int/tobacco/global\\_report/en/](http://www.who.int/tobacco/global_report/en/).
21. *Guidelines for implementation of Article 6 of the WHO Framework Convention on Tobacco Control*. 2014; Available from: [http://www.who.int/fctc/guidelines/adopted/Guidelines\\_article\\_6.pdf](http://www.who.int/fctc/guidelines/adopted/Guidelines_article_6.pdf).
22. Krasovsky, K., *Tobacco taxation policy in three Baltic countries after the EU accession*. Tobacco Control and Public Health in Eastern Europe, 2012. **2**(2): p. 81-98.
23. Food and Agriculture Organization of the United Nations. *FAOSTAT*. 2017; Available from: <http://www.fao.org/faostat/en/#data/QC>.
24. Euromonitor International. *Passport. Tobacco in Ecuador*. 2011; Available from: [http://untobaccocontrol.org/impldb/wp-content/uploads/reports/ecuador\\_annex8\\_tobacco\\_in\\_ecuador\\_report\\_of\\_euromonitor\\_international.pdf](http://untobaccocontrol.org/impldb/wp-content/uploads/reports/ecuador_annex8_tobacco_in_ecuador_report_of_euromonitor_international.pdf).
25. Trujillo, S. *Confronting illicit tobacco trade: a global review of country experiences. Ecuador: illicit tobacco trade*. . 2019; Available from: <http://pubdocs.worldbank.org/en/548801548434833771/WBG-Tobacco-IllicitTrade-Ecuador.pdf>.
26. Blecher, E., et al., *Euromonitor data on the illicit trade in cigarettes*. Tob Control, 2015. **24**(1): p. 100-1.
27. Gallagher, A.W.A., et al., *Tobacco industry data on illicit tobacco trade: a systematic review of existing assessments*. Tob Control, 2019. **28**(3): p. 334-345.
28. Chavez, R., *[Price elasticity of demand for cigarettes and alcohol in Ecuador, based on household data]*. Rev Panam Salud Publica, 2016. **40**(4): p. 222-228.
29. U.S. National Cancer Institute and World Health Organization, *The Economics of Tobacco and Tobacco Control*, in *National Cancer Institute Tobacco Control Monograph 21*. 2016, U.S. Department of Health and Human Services, National Institutes of Health, National Cancer Institute; World Health Organization: Bethesda, MD; Geneva, CH.